

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for producing an SOI wafer by the hydrogen ion delamination method comprising at least a step of bonding a base wafer and a bond wafer having a micro bubble layer formed by gas ion implantation and a step of delaminating a wafer having an SOI layer at the micro bubble layer as a border, wherein, after the delamination step, the wafer having an SOI layer is ~~subjected to a two-stage heat treatment~~ is subjected, in an atmosphere containing hydrogen or argon-argon, to both a heat treatment utilizing a rapid heating/rapid cooling apparatus to improve the surface roughness of short periods of the SOI layer and a heat treatment utilizing a batch processing type furnace-furnace to improve the surface roughness of long periods of the SOI layer.

2. (Original) The method for producing an SOI wafer according to Claim 1, wherein the two-stage heat treatment is performed by subjecting the wafers to a heat treatment in the rapid heating/rapid cooling apparatus and then a heat treatment in the batch processing type furnace.

3. (Original) A method for producing an SOI wafer by the hydrogen ion delamination method comprising at least a step of bonding a base wafer and a bond wafer having a micro bubble layer formed by gas ion implantation and a step of delaminating a wafer having an SOI layer at the micro bubble layer as a border, wherein an FZ wafer, an epitaxial wafer or a CZ wafer of which COPs at least on surface are reduced is used as the bond wafer, and the wafer having an SOI layer is subjected to a heat treatment under an atmosphere containing hydrogen or argon in a batch processing type furnace after the delamination step.

4-5. (Canceled)

6. (Withdrawn) An SOI wafer produced by the method according to Claim 1, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1  $\mu\text{m}$  square and 10  $\mu\text{m}$  square.

7. (Withdrawn) An SOI wafer produced by the method according to Claim 2, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1  $\mu\text{m}$  square and 10  $\mu\text{m}$  square.

8. (Withdrawn) An SOI wafer produced by the method according to Claim 3, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1  $\mu\text{m}$  square and 10  $\mu\text{m}$  square.

9. (Canceled)